# BRUHAT BANGALORE MAHANAGARA PALIKE

## PWD FORM - 45 (WORK SLIP)

**Name of Work: Installation and Construction of RO Plant in Ward No. 08 Kodigehalli**

**Name of Agency: Sri R. Vasanth, Contractor, # 20, A T Layout, Nagashettahalli, RMV 2nd Stage, Bangalore - 94.**

**Estimated Cost: 15,00,000.00**

**Tender Amount : Rs. 15,42,141.53 Lakhs**

**Work Order No. BBMP/EE/BTP/WO/169/2016-17 Dated: 09.01.2017.**

| SL. No. | Description | Unit | Qty. as per Sanctioned Estimate | | | Qty. as per Tender | | | Actual executed Qty. | Qty. as per Actuals upto 125% | | | Qty. as per Actuals above 125% | | | Total Executed Amount | Savings | Excess | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Qty. | Rate | Amount | Qty. | Rate | Amount | | Qty. | Rate | Amount | Qty. | Rate 2016-17+ T.P | Amount | | | | |
| *1* | *2* | *3* | *4* | *5* | *6* | *7* | *8* | *9* | *10* | *11* | *12* | *13* | *14* | *15* | *16* | *17* | *18* | *19* | *20* |
| 1 | Geophysical investigation of site for sinking Borewell for supplying drinking water to the habitation either through the Hand pump, MWS of P.W.S.S by vertical | Each | 1 | 1882.00 | 1882.00 | 1.00 | 1900.00 | 1900.00 | 0.00 | 0.00 | 1900.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 1900.00 | | |
| 2 | Sinking borewell of 165 mm dia clear using super fast hydraulic rig of capacity 250 PSIG & above CFM & above in all strats including over | Rmtr | 50.00 | 306.00 | 15300.00 | 50.00 | 350.00 | 17500.00 | 0.00 | 0.00 | 350.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 17500.00 | | |
| 3 | 50 to 100 m | Rmtr | 50.00 | 400.00 | 20000.00 | 50.00 | 450.00 | 22500.00 | 0.00 | 0.00 | 450.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 22500.00 | | |
| 4 | 100 to 150 m | Rmtr | 50.00 | 445.00 | 22250.00 | 50.00 | 500.00 | 25000.00 | 0.00 | 0.00 | 500.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 25000.00 | | |
| 5 | 150 to 200 m | Rmtr | 50.00 | 470.00 | 23500.00 | 50.00 | 550.00 | 27500.00 | 0.00 | 0.00 | 550.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 27500.00 | | |
| 6 | 200 to 250 m | Rmtr | 50.00 | 544.00 | 27200.00 | 50.00 | 600.00 | 30000.00 | 0.00 | 0.00 | 600.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 30000.00 | | |
| 7 | 250 to 300 m | Rmtr | 50.00 | 583.00 | 29150.00 | 50.00 | 600.00 | 30000.00 | 0.00 | 0.00 | 600.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 30000.00 | | |
| 8 | Supply of ISI mark 175 mm nominal bore medium black ERW casing pipe of 5 mm thick black electric resistance continuous welded mild steel tube material confirming to IS | Rmtr | 50.00 | 1325.00 | 66250.00 | 50.00 | 1400.00 | 70000.00 | 0.00 | 0.00 | 1400.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 70000.00 | | |
| 9 | Providing 250mm dia PVC Pipe 6kg/cm as per specification and direction of the Engineer in Charge | Rmtr | 18.00 | 754.47 | 13580.46 | 18.00 | 800.00 | 14400.00 | 0.00 | 0.00 | 800.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 14400.00 | | |
| 10 | Providing and fixing 175mm Borewell Cap with clamp Set H/D,with all lead and lift, loading, unloading and labour charges etc., complete and as per the directions | No. | 1 | 100.00 | 100.00 | 1.00 | 120.00 | 120.00 | 0.00 | 0.00 | 120.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 120.00 | | |
| 11 | Supply and delivery at site brand New texmo/ innoval/ Lubi/ Sabar / Atalanta/ Calamal/ make suitable for vertical installation in 150mm dia bore well comprising of single | No | 1 | 60400.00 | 60400.00 | 1.00 | 64000.00 | 64000.00 | 0.00 | 0.00 | 64000.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 64000.00 | | |
| 12 | Supplying of ISI marked galvanized mild steel tube (continously welded electric resistance welded (ERW) high frequency, induction welded (HFIW) Hot finished welded type of | Rmtr | 250.00 | 375.00 | 93750.00 | 250.00 | 400.00 | 100000.00 | 0.00 | 0.00 | 400.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 100000.00 | | |
| 13 | Heavy Duty Collar 50 mm dia | Nos | 44 | 130.00 | 5720.00 | 44.00 | 120.00 | 5280.00 | 0.00 | 0.00 | 120.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 5280.00 | | |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Qty. | Rate | Amount | Qty. | Rate | Amount | | Qty. | Rate | Amount | Qty. | Rate 2016-17+ T.P | Amount | | | | |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| 14 | Supplying and drawing 3 core flat PVC sheathed submersible pump cable manufactured with electrolytic grade copper with flexible copper conductor confirming to table 3 | Mtr | 510.00 | 188.70 | 96237.00 | 510.00 | 200.00 | 102000.00 | 0.00 | 0.00 | 200.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 102000.00 | | |
| 15 | Erection of pumpset including aligning and balancing with all necessary erection materials and labour including supply and erection of one pair supporting clamps, one | No | 1 | 3000.00 | 3000.00 | 1.00 | 3200.00 | 3200.00 | 0.00 | 0.00 | 3200.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 3200.00 | | |
| 16 | Supplying and fixing 20"x20"x2.5" polished wood board made of not less than 15mm thick plank on both sides with planks made out of not more than 2 pieces and fixing the | No. | 1 | 302.00 | 302.00 | 1.00 | 300.00 | 300.00 | 0.00 | 0.00 | 300.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 300.00 | | |
| 17 | Supplying of LTUG cable having aluminium condutor PVC insulated shethed, galvnised steel, wire / steel tap armoured cable with PVC outer sheathing 1.1 KV class.with | Mtr | 30.00 | 140.40 | 4212.00 | 30.00 | 110.00 | 3300.00 | 0.00 | 0.00 | 110.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 3300.00 | | |
| 18 | Labour charges for laying of 1.1 K.V class UG cable (PWD Electrical SR-1999-2000, with all lead and lift, loading, unloading and labour charges etc., complete and as per | Mtr | 30.00 | 10.80 | 324.00 | 30.00 | 10.00 | 300.00 | 0.00 | 0.00 | 10.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 300.00 | | |
| 19 | Digging or trenching of 0.6 m x 0.5 m wide refilling the trench to the required ground level and consolidating etc., complete as per Civil SR KSRB 1-2 P-7 with all lead | Mtr | 25.00 | 85.00 | 2125.00 | 25.00 | 80.00 | 2000.00 | 0.00 | 0.00 | 80.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 2000.00 | | |
| 20 | Supplying and fixing of Class A (meaium duty) GI pipe of wall thickness not less than 3.25mm on pole/wall/drain crossing with necessary clamping arrangements | Mtr | 4.00 | 345.00 | 1380.00 | 4.00 | 350.00 | 1400.00 | 0.00 | 0.00 | 350.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 1400.00 | | |
| 21 | Supplying and fixing L.T. cast Iron pot head suitable for 1.1 KV class UG cable filled with necessary bituumen/insulating compound complete with terminals, clamps, | No. | 1 | 280.00 | 280.00 | 1.00 | 300.00 | 300.00 | 0.00 | 0.00 | 300.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 300.00 | | |
| 22 | Supplying, fixing, wiring, earth electrode for grounding conduits, I.C cutouts and other equipments on the meter board using 40 mm dia 2.90 mm thick GI pipe 2.5 m | No | 1 | 2727.00 | 2727.00 | 1.00 | 2800.00 | 2800.00 | 0.00 | 0.00 | 2800.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 2800.00 | | |
| 23 | Supplying and fixing of Porcelain fuse channel with cut out on existing wooden / panel using necessary nuts, bolts and washer etc.,with all lead and lift, loading, | No. | 6 | 180.00 | 1080.00 | 6.00 | 190.00 | 1140.00 | 0.00 | 0.00 | 190.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 1140.00 | | |

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| | | | Qty. | Rate | Amount | Qty. | Rate | Amount | | Qty. | Rate | Amount | Qty. | Rate 2016-17+ T.P | Amount | | | | |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| 24 | Providing and fixing in position **50mm** nominal bore gun metal non-return valve horizontal type of approved make including cost of all materials, labour and HOM of | No | 1 | 1579.40 | 1579.40 | 1.00 | 1600.00 | 1600.00 | 0.00 | 0.00 | 1600.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 1600.00 | | |
| 25 | Providing NP/CP waste unions conforming to ISI specifications and fixing them in position as per directions including cost of materials, fixtures and conveyance | No | 1 | 227.90 | 227.90 | 1.00 | 230.00 | 230.00 | 0.00 | 0.00 | 230.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 230.00 | | |
| 26 | SSupplying and fixing 50mm dia GI X nipple with ISI mark with all lead and lift loading unloading and labour etc., complete and as per the directions of the Engineer-in-charge | No | 4 | 80.00 | 320.00 | 4.00 | 90.00 | 360.00 | 0.00 | 0.00 | 90.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 360.00 | | |
| 27 | Supplying shunt capaitors conforming to IS 2834, 3phase 400/440 volts grade for power factor improvement of rotating machinery, Capacitor in KVAR rating Nos. | No | 1 | 350.00 | 350.00 | 1.00 | 360.00 | 360.00 | 0.00 | 0.00 | 360.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 360.00 | | |
| 28 | Supplying and fixing miniature circuit breakers/solaters on existing MCB distribution boards using necessary fixing materiasl wiring complete as requireds 5 to 30 amps | No | 1 | 1547.00 | 1547.00 | 1.00 | 1600.00 | 1600.00 | 0.00 | 0.00 | 1600.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 1600.00 | | |
| 29 | Fabrication supplying and mounting MS box of 16 SWG suitable for floor /wall mounting, fully weather proof with provision for better heat dissipation, provided with hinged | Sq.Cm | 23400.00 | 0.33 | 7722.00 | 23400.00 | 0.36 | 8424.00 | 0.00 | 0.00 | 0.36 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 8424.00 | | |
| 30 | Supplying and delivery at site brand new star / Essen/ Lotus/Sun-shines/Adarsh/ GK Controls best indigenous make combined energy meter - cum- control panel board | No. | 1 | 11000.00 | 11000.00 | 1.00 | 12000.00 | 12000.00 | 0.00 | 0.00 | 12000.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 12000.00 | | |
| 31 | Earthwork excavation for pipeline foundation including deporiting or bank up to a depth of 50 mtrs including shiriry and statting danger lighting and using site rails and | Cum | 27.00 | 188.00 | 5076.00 | 27.00 | 190.00 | 5130.00 | 0.00 | 0.00 | 190.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 5130.00 | | |
| 32 | Providing and instalation at site of works P.V.C.Pipes including cost of pipes and specials and incluidng lowring into trenches, laying true to line, level and perfect linking at | Rmtr | 60.00 | 157.00 | 9420.00 | 60.00 | 160.00 | 9600.00 | 0.00 | 0.00 | 160.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 9600.00 | | |
| 33 | Refilling the bumont and pipeline treanches with secleted available earthe for trench excavation including authority condition in layers from thedi including | Cum | 27.00 | 61.00 | 1647.00 | 27.00 | 70.00 | 1890.00 | 0.00 | 0.00 | 70.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 1890.00 | | |

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| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| 34 | Providing and fixing in position brass gate valve with C.I wheel of approved quality (screwed end) 50mm nominal bore including cost of all materials, labour and HOM of | Each | 2 | 2120.00 | 4240.00 | 2.00 | 2200.00 | 4400.00 | 0.00 | 0.00 | 2200.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 4400.00 | | |
| | **ROOM FOR RO PLANT** | | | | | | | | | | | | | | | | | | |
| 35 | Earth work excavation for foundation of buildings, culverts water supply, sanitary line and electrical conduits either in pits or in trenches 1.5m and above in width, | Cum | 25.70 | 188.68 | 4849.08 | 25.70 | 190.00 | 4883.00 | 20.40 | 20.40 | 190.00 | 3876.00 | 0.00 | 0.00 | 0.00 | 3876.00 | 1007.00 | | |
| 36 | Providing and laying in position plain cement concrete of **mix 1:4:8 with OPC cement @ 180 kgs with 40mm** and down size graded granite metal coarse aggregates @ | Cum | 6.72 | 4976.70 | 33443.42 | 6.72 | 5000.00 | 33600.00 | 7.60 | 7.60 | 5000.00 | 37995.00 | 0.00 | 0.00 | 0.00 | 37995.00 | | 4395.00 | |
| 37 | Providing and constructing granite / trap / basalt size stone masonry in **foundation with cement mortar 1:6**, stone hammerd dressed in courses not less than 20 cms high, | Cum | 5.58 | 4058.74 | 22647.77 | 5.58 | 4300.00 | 23994.00 | 7.38 | 7.38 | 4300.00 | 31734.00 | 0.00 | 0.00 | 0.00 | 31734.00 | | 7740.00 | |
| 38 | Providing and constructing granite / trap / basalt size stone masonry in **basement with cement mortar 1:6**, edges of stones chistle dressed in courses not less than 15 | Cum | 4.94 | 4814.52 | 23783.73 | 4.94 | 5300.00 | 26182.00 | 4.43 | 4.43 | 5300.00 | 23468.00 | 0.00 | 0.00 | 0.00 | 23468.00 | 2714.00 | | |
| 39 | Filling available excavated earth (excluding rock) in sides of foundations upto plinth in layers not exceeding 20 cms. in depth, compacting each deposited layer by | Cum | 25.70 | 127.20 | 3269.04 | 25.70 | 150.00 | 3855.00 | 20.40 | 20.40 | 150.00 | 3060.00 | 0.00 | 0.00 | 0.00 | 3060.00 | 795.00 | | |
| 40 | Providing and constructing precast concrete solid blocks with compressive strength not les than 35 Kg/sqm with cement mortar 1:4 masonry (quoin, Jamb, closer | Sqm | 55.52 | 999.58 | 55496.68 | 55.52 | 1200.00 | 66624.00 | 0.00 | 0.00 | 1200.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 66624.00 | | |
| 41 | Providing and laying in position **reinforced cement concrete of design mix M20 with OPC cement @ 320 kgs, with 20mm and down size graded granite metal**, coarse | Cum | 8.76 | 6083.34 | 53290.06 | 8.76 | 6600.00 | 57816.00 | 1.48 | 1.48 | 6600.00 | 9742.00 | 0.00 | 0.00 | 0.00 | 9742.00 | 48074.00 | | |
| 42 | KSRB 4.2.10 : Providing and laying in position **reinforced cement concrete of design mix M20** with OPC cement @ 24kgs, with 12 mm and down size graded granite metal | Sqm | 2.03 | 465.34 | 944.64 | 2.03 | 480.00 | 974.40 | 0.00 | 0.00 | 480.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 974.40 | | |
| 43 | Providing **mild T.M.T. reinforcement for R.C.C** work including straightening, cutting, bending, hooking, placing in position, lapping and / or welding | Qtl | 8.91 | 6368.48 | 56743.16 | 8.91 | 6800.00 | 60588.00 | 1.48 | 1.48 | 6800.00 | 10037.00 | 0.00 | 0.00 | 0.00 | 10037.00 | 50551.00 | | |

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| | | | Qty. | Rate | Amount | Qty. | Rate | Amount | | Qty. | Rate | Amount | Qty. | Rate 2016-17+ T.P | Amount | | | | |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| 44 | KSRB 4-6.10 : Providing and removing centering, shuttering, strutting, propping etc., for **chajjas** corbels etc., including edges including cost of all materials, | Sqm | 58.75 | 301.04 | 17686.10 | 58.75 | 300.00 | 17625.00 | 0.00 | 0.00 | 300.00 | 1968.00 | 0.00 | 0.00 | 0.00 | 1968.00 | 15657.00 | | |
| 45 | Providing and removing centering, shuttering, strutting, propping etc., and removal of form work for **vertical surface such as walls at any thickness**, including attached | Sqm | 2.70 | 278.78 | 752.71 | 2.70 | 280.00 | 756.00 | 6.56 | 6.56 | 280.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 756.00 | | |
| 46 | Providing 12mm thick cement plaster in single coat with cement mortar 1:3, to ceiling including rounding off corners wherever required smooth rendering, : | Sqm | 19.27 | 193.98 | 3737.99 | 19.27 | 200.00 | 3854.00 | 0.00 | 0.00 | 200.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 3854.00 | | |
| 47 | Providing 20mm thick cement plaster in single coat with cement mortar 1:4, to stone masonry including rounding off corners wherever required smooth | Sqm | 44.12 | 235.32 | 10382.32 | 44.12 | 260.00 | 11471.20 | 0.00 | 0.00 | 260.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 11471.20 | | |
| 48 | Providing lime rendering for plastering to wall and ceiling, including cost of materials, labour, curing etc., complete and as per the directions of the Engineer-in- | Sqm | 63.39 | 25.44 | 1612.64 | 63.39 | 30.00 | 1901.70 | 0.00 | 0.00 | 30.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 1901.70 | | |
| 49 | Providing 18mm thick cement plaster in single coat with cement mortar 1:6, to brick masonry including rounding off corners wherever required smooth | Sqm | 57.56 | 199.28 | 11470.56 | 57.56 | 240.00 | 13814.40 | 0.00 | 0.00 | 240.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 13814.40 | | |
| 50 | Providing and applying two coats with oil bound washable distemper of approved brand and shade on wall surface including priming coat with distemper primer after | Sqm | 107.51 | 69.96 | 7521.40 | 107.51 | 90.00 | 9675.90 | 0.00 | 0.00 | 90.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 9675.90 | | |
| 51 | Providing and finishing external walls in tow coats with water proof cement paint of approve brand and shade to give an even shade after thourghly brooming the surface to | Cum | 57.56 | 83.74 | 4820.07 | 57.56 | 80.00 | 4604.80 | 0.00 | 0.00 | 80.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 4604.80 | | |
| 52 | Providing and applying enamel metal paint two coats (excluding priming coat) over new steel or other metal surface brushing to give an even shade after cleaning oil, | Sqm | 35.06 | 83.74 | 2935.92 | 35.06 | 80.00 | 2804.80 | 0.00 | 0.00 | 80.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 2804.80 | | |
| 53 | Providing and fixing Special make glazed Vitrified tiles (Granomite finis) of approved make, quality and colour of sized 6000x600x10mm thick fixed on existing flooring wit ha | Sqm | 49.83 | 1216.88 | 60637.13 | 49.83 | 1100.00 | 54813.00 | 19.38 | 19.38 | 1100.00 | 21318.00 | 0.00 | 0.00 | 0.00 | 21318.00 | 33495.00 | | |

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| | | | Qty. | Rate | Amount | Qty. | Rate | Amount | | Qty. | Rate | Amount | Qty. | Rate 2016-17+ T.P | Amount | | | | |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| 54 | Providing and laying/fixing cement base, precast pre polished cement concrete, designer tiles 25mm thick conforming to IS 1237 heavy duty tiles for flooring reads of steps of | Sqm | 5.49 | 1116.18 | 6127.83 | 5.49 | 1300.00 | 7137.00 | 0.00 | 0.00 | 1300.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 7137.00 | | |
| 55 | Providing and fixing in position in cement concrete 1:3:6 steel glazed windows and ventilators side hung/top hung fully openable as per approved drawings using Z angles | Sqm | 1.08 | 3209.68 | 3466.45 | 1.08 | 3500.00 | 3780.00 | 0.00 | 0.00 | 3500.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 3780.00 | | |
| 56 | KSRB: 7.5 Providing and fixing pull and push type rolling shutters of approved make out of 18 guage, 75mm wide cold rolled steel laths of convex corrugation, with side | Sqm | 7.50 | 2838.68 | 21290.10 | 7.50 | 3000.00 | 22500.00 | 0.00 | 0.00 | 3000.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 22500.00 | | |
| 57 | **Providing R.O. Plant** | | | | | | | | | | | | | | | | | | |
| | Providing revsrse osmosis suystem to cover 2000 Liters of High TDS water per hour | | | | | | | | | | | | | | | | | | |
| | **TECHNICAL SPECIFICATIONS** | | | | | | | | | | | | | | | | | | |
| | Flow Rate: | | | | | | | | | | | | | | | | | | |
| | Feed Water : 5000 LPH | | | | | | | | | | | | | | | | | | |
| | Treated Water : 3000 LPH | | | | | | | | | | | | | | | | | | |
| | Reject Water : 2000 LPH | | | | | | | | | | | | | | | | | | |
| | **RAW WATER PUMP** | | | | | | | | | | | | | | | | | | |
| | Purpose:- To feed the Dual Medial filter at pressure more than 2.00 bars which is min operating | | | | | | | | | | | | | | | | | | |
| | **SAND MEDIA FILTER** | | | | | | | | | | | | | | | | | | |
| | Purpose:- To remove the total suspendred solids, dirt, iron and reduce silt density index which can foul the members | | | | | | | | | | | | | | | | | | |
| | **ACTIVATE CARBON FILTER** | | | | | | | | | | | | | | | | | | |
| | Purpose:- To remove the total color, smell, odor from the water. | | | | | | | | | | | | | | | | | | |
| | Media: Mixed bed sand media consisting of the following i) Gravel ii) Pebbles iii) carbon Average porosity 50 micron particulate size bed depth : 1500 mm pipelines & | | | | | | | | | | | | | | | | | | |
| | **DOSING SYSTEM** | | | | | | | | | | | | | | | | | | |
| | Purpose : To dose anti scaling chemical to protect the scaling formation on RO Membranes | | | | | | | | | | | | | | | | | | |
| | **MICRON FILTER** | | | | | | | | | | | | | | | | | | |

| SL. No. | Description | Unit | Qty. as per Sanctioned Estimate | | | Qty. as per Tender | | | Actual executed Qty. | Qty. as per Actuals upto 125% | | | Qty. as per Actuals above 125% | | | Total Executed Amount | Savings | Excess | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Qty. | Rate | Amount | Qty. | Rate | Amount | | Qty. | Rate | Amount | Qty. | Rate 2016-17+ T.P | Amount | | | | |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| | Purpose : To remove the fine particles ip to 05 microns and reduce silt density levels to | | | | | | | | | | | | | | | | | | |
| | **HIGH PRESSURE PUMP** | | | | | | | | | | | | | | | | | | |
| | Purpose : To feed the reverse Osmosis membrane at pressure more than the osmotic pressure taking into consideration flux rate, flow and recovery | | | | | | | | | | | | | | | | | | |
| | **RO membrane housing.** | | | | | | | | | | | | | | | | | | |
| | Purpose : To pack membrane and operate at high pressure. | | | | | | | | | | | | | | | | | | |
| | **RO MEMBRANES** | | | | | | | | | | | | | | | | | | |
| | Purpose : To remove the major part of TDS into 98% by Reverse Osmosis Membranes arranged and designed to give adequate flow the | | | | | | | | | | | | | | | | | | |
| | **RO CLEANSING SYSTEM** | | | | | | | | | | | | | | | | | | |
| | **ELECTRICAL PANEL** | | | | | | | | | | | | | | | | | | |
| | Purpose : A control panel is provided as a safety measure for the pumps & other electrical items. | | | | | | | | | | | | | | | | | | |
| | Specifications a) Complete starters, overload relays, b) Voltmeter, Ammeter, MCB's indicating lights, c) Rocker switches for Dozers, d) incomers, Auto-Manual switches. | | | | | | | | | | | | | | | | | | |
| | **INSTRUMENTATION** | | | | | | | | | | | | | | | | | | |
| | Purpose : a) Flow meter : To measure the online flow of water flowtec b) Low pressure switch : To protect RO pump from dry running c) High pressure switch : To protect | | | | | | | | | | | | | | | | | | |
| | **PH DOSING SYSTEM** | | | | | | | | | | | | | | | | | | |
| | Purpose to dose sodium Bi-carbonate for enhances product water SS till the pre-filteration & SS from HPP to thhe premeter line termination point NRV's pressure | Nos | 1.00 | 515000.00 | 515000.00 | 1.00 | 525000.00 | 525000.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 525000.00 | | |
| | **ELECTRIFICATION** | | | | | | | | | | | | | | | | | | |
| 58 | Supplying and wiring adopting loop system in existing PVC Conduit / casing capping using 1100V grade, COPPER conductor flexible multistrand FRLS PVC insulated, 2 | Point | 2.00 | 245.00 | 490.00 | 2.00 | 250.00 | 500.00 | 2.00 | 2.00 | 250.00 | 500.00 | 0.00 | 0.00 | 0.00 | 500.00 | 0.00 | | |
| 59 | c) Long point above 6Mtr upto 10Mtr from tapping point to out let | Point | 2.00 | 363.00 | 726.00 | 2.00 | 350.00 | 700.00 | 2.00 | 2.00 | 350.00 | 700.00 | 0.00 | 0.00 | 0.00 | 700.00 | 0.00 | | |

| SL. No. | Description | Unit | Qty. as per Sanctioned Estimate | | | Qty. as per Tender | | | Actual executed Qty. | Qty. as per Actuals upto 125% | | | Qty. as per Actuals above 125% | | | Total Executed Amount | Savings | Excess | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Qty. | Rate | Amount | Qty. | Rate | Amount | | Qty. | Rate | Amount | Qty. | Rate 2016-17+ T.P | Amount | | | | |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| 60 | Supplying and flush mounting teak wooden box without front plank, made of not less than 12mm thick wood, after due groove cutting, Finishing with necessary cement | Each | 12.00 | 68.00 | 816.00 | 12.00 | 60.00 | 720.00 | 12.00 | 12.00 | 60.00 | 720.00 | 0.00 | 0.00 | 0.00 | 720.00 | 0.00 | | |
| 61 | (1.6.1) 12"x12"x3" | Each | 6.00 | 116.00 | 696.00 | 6.00 | 110.00 | 660.00 | 6.00 | 6.00 | 110.00 | 660.00 | 0.00 | 0.00 | 0.00 | 660.00 | 0.00 | | |
| 62 | (1.6.3)10"x7"x3" (254x178x76mm) | Each | 6.00 | 87.00 | 522.00 | 6.00 | 80.00 | 480.00 | 6.00 | 6.00 | 80.00 | 480.00 | 0.00 | 0.00 | 0.00 | 480.00 | 0.00 | | |
| 63 | Supplying 4mm thick plastic sheet with necessary nitches for fixing switches, regulators etc., and fixing on existing wooden or metal box using N.F. screws etc., complete | SqCM | 6666.66 | 0.30 | 2000.00 | 6666.66 | 0.20 | 1333.33 | 6666.66 | 6666.66 | 0.20 | 1333.00 | 0.00 | 0.00 | 0.00 | 1333.00 | 0.33 | | |
| 64 | Extra for Groove cutting in brick wall/CC floor to the suitable depth for concealing of Conduit/GI pipe and plastering, finishing upto wall surface complete. upto 50mm | Mtr | 10.00 | 21.00 | 210.00 | 10.00 | 20.00 | 200.00 | 10.00 | 10.00 | 20.00 | 200.00 | 0.00 | 0.00 | 0.00 | 200.00 | 0.00 | | |
| 65 | Supplying heavy gauge PVC Conduit Pipe 19/20 mm dia 2 mm thick with suitable size bends, metal junction boxes adhesive paste etc., by groove cutting in the wall and | Mtr | 10.00 | 56.00 | 560.00 | 10.00 | 50.00 | 500.00 | 10.00 | 10.00 | 50.00 | 500.00 | 0.00 | 0.00 | 0.00 | 500.00 | 0.00 | | |
| 66 | Supplying and fixing PBBC/Bakelite straight or slant batten holder and wiring with 60w/230 volts lamps etc., complete and as per the directions of the Engineer-in-charge | Each | 2.00 | 88.00 | 176.00 | 2.00 | 80.00 | 160.00 | 2.00 | 2.00 | 80.00 | 160.00 | 0.00 | 0.00 | 0.00 | 160.00 | 0.00 | | |
| 67 | Supplying patti type fluorescent tube light fitting of 2' - suitable for 14 watts fluorescent tube fitting, made out of M.S. Sheet and stove enameled with HF Electronic | Each | 4.00 | 591.00 | 2364.00 | 4.00 | 500.00 | 2000.00 | 2.00 | 2.00 | 500.00 | 1000.00 | 0.00 | 0.00 | 0.00 | 1000.00 | 1000.00 | | |
| 68 | Wiring for lighting/power circuit using one of FRLS PVC insulated 1100V grade, multistrand Copper with low conductor resistance single | Mtr | 5.00 | 18.60 | 93.00 | 5.00 | 20.00 | 100.00 | 5.00 | 5.00 | 20.00 | 100.00 | 0.00 | 0.00 | 0.00 | 100.00 | 0.00 | | |
| 69 | Supplying and fixing cast Aluminum round or oblong type bulk head fitting with GI wire guard, glass cover with 60/100 watts 230V GLS | Each | 4.00 | 747.00 | 2988.00 | 4.00 | 800.00 | 3200.00 | 4.00 | 4.00 | 800.00 | 3200.00 | 0.00 | 0.00 | 0.00 | 3200.00 | 0.00 | | |
| 70 | Supplying, fixing, wiring, earth electrode for grounding conduits, I.C. cutouts and other equipment's on the meter board using 40mm dia | No | 1.00 | 2727.00 | 2727.00 | 1.00 | 2800.00 | 2800.00 | 1.00 | 1.00 | 2800.00 | 2800.00 | 0.00 | 0.00 | 0.00 | 2800.00 | 0.00 | | |
| | Total | | | | | | | | | | | | | | | **155551.00** | | **12135.00** | |
| | | | | | | | | | **EIRL** | | | | | | | | | | |
| 71 | Providing and Construction of pup panel cabin MS material vetical 50 x 100 mm thick tube, rafter 50 x 100 mm thick rectangle tube 50 x 50 | Each | | | | | | | 1.00 | | | | 1.00 | 393450.00 | 393450.00 | 393450.00 | | 393450.00 | |

| SL. No. | Description | Unit | Qty. as per Sanctioned Estimate | | | Qty. as per Tender | | | Actual executed Qty. | Qty. as per Actuals upto 125% | | | Qty. as per Actuals above 125% | | | Total Executed Amount | Savings | Excess | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Qty. | Rate | Amount | Qty. | Rate | Amount | | Qty. | Rate | Amount | Qty. | Rate 2016-17+ T.P | Amount | | | | |
| *1* | *2* | *3* | *4* | *5* | *6* | *7* | *8* | *9* | *10* | *11* | *12* | *13* | *14* | *15* | *16* | *17* | *18* | *19* | *20* |
| 72 | **10000 LPD R.O. Plant** | | | | | | | | | | | | | | | | | | |
| | **RAW WATER PUMP:** | | | | | | | | | | | | | | | | | | |
| | Quantity : 1No. | | | | | | | | | | | | | | | | | | |
| | Type: Centrifugal Mono Block | | | | | | | | | | | | | | | | | | |
| | MOC & Make : UKL | | | | | | | | | | | | | | | | | | |
| | Motor Rating : 0.75 HP | | | | | | | | | | | | | | | | | | |
| | **PRESSURE SAND FILTER:** | | | | | | | | | | | | | | | | | | |
| | Quantity : 1No. | | | | | | | | | | | | | | | | | | |
| | Capacity : 1000 LPH | | | | | | | | | | | | | | | | | | |
| | MOC & Make of Housing : UKL | | | | | | | | | | | | | | | | | | |
| | MOC & Make of Cartridge : UKL | | | | | | | | | | | | | | | | | | |
| | Capcity : 100 LPH | | | | | | | | | | | | | | | | | | |
| | MOC & Make of Vessel : UKL | | | | | | | | | | | | | | | | | | |
| | Diameter : 40 mm | | | | | | | | | | | | | | | | | | |
| | Type of Valve : Single Multiport | | | | | | | | | | | | | | | | | | |
| | media : Support bed + Sand | | | | | | | | | | | | | | | | | | |
| | **MICRON CARTRIDGE FILTER :** | | | | | | | | | | | | | | | | | | |
| | Quantity : 1 Set. | | | | | | | | | | | | | | | | | | |
| | Filter Rating : 5 Microns | | | | | | | | | | | | | | | | | | |
| | Size : 20 " Long | | | | | | | | | | | | | | | | | | |
| | **ANTISCALANT DOSING PUMPS:** | | | | | | | | | | | | | | | | | | |
| | Quanity : 1 Set | | | | | | | | | | | | | | | | | | |
| | Type : Electro - magnetic | | | | | | | | | | | | | | | | | | |
| | Capacity : 1.5 LPH @ 4 Bar | | | | | | | | | | | | | | | | | | |
| | **HIGH PRESSURE PUMP:** | | | | | | | | | | | | | | | | | | |
| | Quantity : 1 No | | | | | | | | | | | | | | | | | | |
| | Capacity : 1700 LPH | | | | | | | | | | | | | | | | | | |
| | Type of Pump : Vertical Multistage Centrigugal Pump | | | | | | | | | | | | | | | | | | |
| | MOC : SS 304 | | | | | | | | | | | | | | | | | | |
| | Motor Rating : 2 HP, 3 Phase | | | | | | | | | | | | | | | | | | |
| | Maximum Pressure : 12 Kg/ cm2 | | | | | | | | | | | | | | | | | | |
| | Make : UKL | | | | | | | | | | | | | | | | | | |
| | **RESERVE OSMOSIS SYSTEM :** | | | | | | | | | | | | | | | | | | |
| | Quantity : 1 No | | | | | | | | | | | | | | | | | | |
| | Capacity : 1000 LPH | | | | | | | | | | | | | | | | | | |
| | Module Type | | | | | | | | | | | | | | | | | | |
| | Membrane Specifications | | | | | | | | | | | | | | | | | | |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Qty. | Rate | Amount | Qty. | Rate | Amount | | Qty. | Rate | Amount | Qty. | Rate 2016-17+ T.P | Amount | | | | |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| | Make of Membrane : UKL | | | | | | | | | | | | | | | | | | |
| | **UV STERILISER** | | | | | | | | | | | | | | | | | | |
| | Max. Treatment Flow : 1 m3/hr | | | | | | | | | | | | | | | | | | |
| | No. of Lamps : 1 No | | | | | | | | | | | | | | | | | | |
| | Wattage : 39 W | | | | | | | | | | | | | | | | | | |
| | Efficiency : 99.99% | | | | | | | | | | | | | | | | | | |
| | Material of Construction : SS 304 | | | | | | | | | | | | | | | | | | |
| | **PRODUCT WATER QUALITY:** | | | | | | | | | | | | | | | | | | |
| | Appearance : Crystal Clear | | | | | | | | | | | | | | | | | | |
| | Abide by the ISO Standards | | | | | | | | | | | | | | | | | | |
| | S S Tank : 304 Grade with 16 guage 2000 liters Capacity | | | | | | | | | | | | | | | | | | |
| | 304 Grade 10 Gauage SS Pipe {with stream valve} 25 Ft | | | | | | | | | | | | | | | | | | |
| | **COIN BOOTH DISPENSING UNIT** | | | | | | | | | | | | | | | | | | |
| | for 5 Liters & 20 Ltrs Separately | | | | | | | | | | | | | | | | | | |
| | Raw Water Stoage Tank : Dunction - for Storage of Raw Water | | | | | | | | | | | | | | | | | | |
| | Type / MOC : Two / Three Layered PE tanks White / Transparent in color made from virgin material of food grade Quality suitabke fir the purpose of providing | | | | | | | | | | | | | | | | | | |
| | Storage Drinking / Portable Water : 5000 Liters Capacity | Nos | | | | | | | 1.00 | | | | 1.00 | 992543.00 | 992543.00 | 992543.00 | | 992543.00 | |
| | Sub Total | | | | 1470155.56 | | | | | | | | | | | 1385993.00 | | | |
| | T P Inspection Charges @ 1% | | | | 14701.56 | | | | | | | | | | | | | | |
| | BESCOM Deposit for Borewell | | | | 8000.00 | | | | | | | | | | | | | | |
| | BESCOM Deposit for RO Plant | | | | 6000.00 | | | | | | | | | | | | | | |
| | Miscelaneous charges | LS | | | 1143.00 | | | | | | | | | | | | | | |
| | **Total** | | | | **1500000.00** | | | **1542141.53** | | | | **155551.00** | | | **1385993.00** | **1541544.00** | **1398725.53** | **1410263.00** | |
| | | | | | | | | | | | | | | | | | | **0.04 Below** | |

**SUMMARY:**

1 **Estimated Cost : Rs. 15.00 Lakhs**

2 **Tender Cost : Rs. 15.42 Lakhs**

3 **During execution as per requirement and site condition, the total Qty to be executed costs Rs. 15.41 Lakhs which is 0.04% BELOW the Tender cost. The proposal may kindly be approved.**

**Assistant Engineer**

**Assistant Executive Engineer**
**Bruhat Bangalore Mahanagara Palike**
**Kodigehalli Sub Division**

**Executive Engineer**
**Bruhat Bangalore Mahanagara Palike**
**Byatarayanapura Division, Bangalore - 92**

Chief Engineer
Yelahanka Zone
Jhath Bangalore Mahanagara
Bangalore 92